

P-6.8 Explain how musical instruments produce resonance and standing waves.

Revised Taxonomy Levels 2.7 B Explain conceptual knowledge

Physical science students did not address this indicator

It is essential for students to

- ❖ Understand how various types of musical instruments produce sounds that vary in frequency and quality.
 - Strings
 - Woodwinds
 - Percussion
 - Brass
- ❖ Understand the ways that various instruments get “out of tune” and how the concept of “beats” can be used to tune an instrument

Assessment

The verb explain means that the major focus of assessment should be for students to “construct a cause and effect model”. In this case, assessments will ensure that students can model how familiar instruments produce sounds of various frequency and amplitude. Because the indicator is written as conceptual knowledge, assessments should require that students understand the “interrelationships among the basic elements within a larger structure that enable them to function together.” In this case, assessments must show that students can construct a cause and effect statement relating each class of instrument is manipulated to produce various frequencies and amplitudes of sound.